

GGCACCGAGTCGGAGCCGGG

CGGAGGGAGGGAAAGAGGAAGGGCAGGGTGAGAGTGAAGCCAGGGCTTAGGACTAGGGGGGGACGGACAAGCCCCCG

T	E	P	R	P	P	E	Q	Q	D	Q	E	G	G	E	A	A	K	A	M	P	G	E	4	
ACG	GAA	GAG	CCG	AGA	CCC	CCG	GAG	CAG	CAG	CAG	GAC	CAG	GAA	GAG	GCG	GCG	AAG	GCG	ATG	CCG	GGG	GAG	12	
A	P	E	E	P	Q	Q	R	P	P	E	A	V	A	A	P	A	G	T	24					
GCT	CCG	GAG	GAG	CCC	CAA	CAA	CGG	CCC	CCT	GAG	GCG	GTC	GCG	GCG	CCT	GCA	GGG	ACC	132					
T	S	R	V	L	R	G	G	R	D	R	G	R	A	A	A	A	A	A	64					
ACT	AGC	AGC	CGC	GTG	CTG	AGG	GGG	GGA	GGT	CGG	GAC	CGA	GGC	CGG	GCT	GCG	GCC	GCC	192					
A	A	V	S	R	R	K	A	E	Y	P	R	R	R	R	S	S	S	P	84					
GCC	GCA	GCT	GTG	TCC	CGC	CGG	AGG	AAG	GCC	GAG	TAT	CCC	CGC	CGG	CGG	AGG	AGC	AGC	CCC	252				
S	A	R	P	P	D	V	P	G	Q	Q	P	Q	A	A	K	S	P	S	P	104				
AGC	GCC	AGG	CCT	CCC	GAC	GTC	CCC	GGG	CAG	CAG	CCC	CAG	GCC	GCG	AAG	TCC	CCG	TCT	GCA	312				
V	Q	G	K	K	S	P	R	L	L	C	I	E	K	V	T	T	D	K	D	124				
GTT	CAG	GGC	AAG	AAG	AGT	CCG	CGA	CTC	CTA	TGC	ATA	GAA	AAA	GTA	ACA	ACT	GAT	AAA	GAT	372				
P	K	E	E	K	E	E	D	D	S	A	L	P	Q	E	V	S	I	A	144					
CCC	AAG	GAA	AAA	GAG	GAA	GAA	GAC	GAT	TCT	TCT	CTC	CTC	CAG	GAA	GTT	TCC	ATT	GCT	432					

FIG. 1A

A S R P S R G W R S S R T S V S R H R D 164
GCA TCT AGA CCT AGC CGG GCC TGG CGT AGT AGG ACA TCT GTT TCT CGC CAT CGT GAT 492

T E N T R S S R S K T G S L Q L I C K S 184
ACA GAG AAC ACC CGA AGC TCT CGG TCC AAG ACC GGT TCA TTG CAG CTC ATT TGC AAG TCA 552

E P N T D Q L D Y D V G E E H Q S P G G 204
GAA CCA AAT ACA GAC CAA CTT GAT TAT GAT GTT GGA GAA GAG CAT CAG TCT CCA GGT GGC 612

I S G E E E E E E M L I S E E E I 224
ATT AGT GGT GAA GAG GAA GAG GAG GAG GAA GAG ATG TTA ATC AGT GAA GAG GAG GAG ATA 672

P F K D D P R D E T Y K P H L E R E T P 244
CCA TTC AAA GAT GAT CCA AGA GAT GAG ACC TAC AAA CCC CAC TTA GAA AGG GAA ACC CCA 732

K P R R K S G K V K E E K E K E I K V 264
AAG CCA CGG AGA AAA TCA GGG AAG GTA AAA GAA GAG AAG GAG AAG GAA ATT AAA GTG 792

E V E V K E E E N E I R E D E E P P 284
GAA GTA GAG GTG GAG GTG AAA GAA GAG GAG AAT GAA ATT AGA GAG GAT GAG GAA CCT CCA 852

R K R G R R K D K S P R L P K R R K 304
AGG AAG AGA GGA AGA CGA AAA GAT GAC AAA AGT CCA CGT TTA CCC AAA AGG AGA AAA 912

K P P I Q Y V R C E M E G C G T V L A H 324
AAG CCT CCA ATC CAG TAT GTC CGT TGT GAG ATG GAA ACT GTC CTT GCC CAT 972

FIG. 1B

P R Y L Q H H I K Y Q H L L K K V V C 344
CCT CGC TAT TTG CAG CAC CAC ATT AAA TAC CAG CAT TTG CTG AAG AAG AAA TAT GTA TGT 1032

P H P S C G R L F R L Q K Q L L R H A K 364
CCC CAT CCC TCC TGT GGA CGA CTC TTC AGG CTT CAG AAG CAA CTT CTG CGA CAT GCC AAA 1092

H H T D Q R D Y T C E Y C A R A F K S S 384
CAT CAT ACA GAT CAA AGG GAT TAT ATC TGT GAA TAT TGT GCT CGG GCC TTC AAG AGT TCC 1152

H N L A V H R M I H T G E K P L Q C E I 404
CAC AAT CTG GCA GTG CAC CGG ATG ATT CAC ACT GGC GAG AAG CCA TTA CAA TGT GAG ATC 1212

C G F T C R Q K A S L N W H M K K H D A 424
TGT GGA TTT ACT TGT CGA CAA AAG GCA TCT CTT AAT TGG CAC ATG AAG AAA CAT GAT GCA 1272

D S F Y Q F S C N I C G K F E K K D S 444
GAC TCC TTC TAC CAG TTT TGT GCA AAT ATC TGT GGC AAA AAA TTT GAG AAG AAG GAC AGC 1332

V V A H K A K S H P E V L I A E A L A A 464
GTA GTG GCA CAC AAG GCA AAA AGC CAC CCT GAG GTG CTG ATT GCA GAA GCT CTG GCT GCC 1392

N A G A L I T S T D I L G T N P E S L T 484
AAT GCA GGC GCC CTC ATC ACC AGC ACA GAT ATC TTG GGC ACT AAC CCA GAG TCC CTG ACG 1452

Q P S D G Q G L P L P E P L G N S T S 504
CAG CCT TCA GAT GGT CCT CCT GGT GGA AAC TCA ACC TCT 1512

FIG. 1C

G E C L L E A E G M S K S Y C S G T E 524
GGA GAG TGC CTA CTG TTA GAA GCT GAA GGG ATG TCA AAG TAC TGC AGT GGG ACG GAA 1572

R V S L M A D G K I F V G S G S G G T 544
CGG GTG AGC CTG ATG GCT GAT GGG AAG ATC TTT GTG GGA AGC GGC AGC AGT GGA GGC ACT 1632

E G L V M N S D I L G A T T E V L I E D 564
GAA GGG CTG GTT ATG AAC TCA GAT ATA CTC GGT GCT ACC ACA GAG GTT CTG ATT GAA GAT 1692

S D S A G P * 570
TCA GAC TCT GCC GGA CCT TAG TGGACAGGAAGACTTGGGCATGGCACAGCTCAGACTTGTATTAAAAGT 1761

TAAAAAGGACAAAAAAAAAAAAA

FIG. 1D

	M	F	
CGACTCACAAAGAACATCATGTTGGCTCCTTAGCAGGCCAAACGACTTTTCTCGCCTCCCTCGCCCCGC	ATG	TTC	2
R T K R S A L V R R L W R S R A P G G E			22
AGG ACC AAA CGA TCT GCG CTC GTC CGG CGT CTC TGG AGG AGC CGT GCG CCC GGC GGC GAG			66
D E E E G A G G G G G G G G E L R G E G A			42
GAC GAG GAG GGC GCA GGG GGA GGT GGA GGA GGG GAG CTG CGG GGA GAA GGG GCG GCG			126
T D S R A H G A G G G G P G R A G C C L			62
ACG GAC AGC CGA GCG CAT GGG GCC GGT GGC GGC CCG GGC AGG GCT GGA TGC TGC CTG			186
G K A V R G A K G H H P H P A A G A			82
GGC AAG GCG GTG CGA GGT GCC AAA GGT CAC CAC CAT CCC CAC CCG CCA GCC GGC GGC			246
G A A G G A E A D L K A L T H S V L K K			102
GGC GCG GCC GGG GGC GCC GAG GCG GAT CTG AAG GCG CTC ACG CAC TCG GTG CTC AAG AAA			306
L K E R Q L E L L Q A V E S R G G T R			122
CTG AAG GAG CGG CAG CTG GAG CTG CTC CAG GCC GTG GAG TCC CGC GGC GGG ACG CGC			366

FIG. 2A

T A C L L P G R L D C R L G P G A P A 142
ACC GCG TGC CTC CTG CCC GGC CGC CTG GAC TGC AGG CTG GGC CCG GGG GCG CCC GCC 426

G A Q P A Q P P S S Y S L P L L C K V 162
GGC GCG CAG CCT GCG OAG CCG CCC TCG TCC TAC TCG CTC CCC CTC CTG CTG TGC AAA GTG 486

F R W P D L R H S S E V K R L C C C E S 182
TTC AGG TGG CCG GAT CTC AGG CAT TCC TCG GAA GTC AAG AGG CTG TGT TGC TGT GAA TCT 546

Y G K I N P E L V C C N P H H L S R L C 202
TAC GGG AAG ATC AAC CCC GAG CTG GTG TGC TGC AAC CCC CAT CAC CTT AGC CGA CTC TGC 606

E L E S P P P Y S R Y P M D F L K P T 222
GAA CTA GAG TCT CCC CCT CCT TAC TCC AGA TAC CCG ATG GAT TTT CTC AAA CCA ACT 666

A D C P D A V P S S A E T G G T N Y L A 242
GCA GAC TGT CCA GAT GCT GTG CCT TCC GCT GAA ACA GGA ACG AAT TAT CTG GCC 726

P G G L S D S Q L L E P G D R S H W C 262
CCT GGG CTT TCA GAT CCT CCT CTG GAG CCT GGG GAT CGG TCA CAC TGG TGC 786

V V A Y W E E K T R V G R L Y C V Q E P 282
GTG GTG GCA TAC TGG GAG GAG ACG AGA GTG GGG AGG CTC TAC TGT GTC CAG GAG CCC 846

S L D I F Y D L P Q G N G F C L G Q L N 302
TCT CTG GAT ATC TTC TAT GAT CTA CCT CAG GGG AAT GGC TTT TGC CTC GGA CAG CTC AAT 906

FIG. 2B

S D N K S Q L V Q K V R S K I G C G I Q 322
TCG GAC AAC AAG AGT CAG CTG GTG CAG AAG GTG CGG AGC AAA ATC GGC TGC GGC ATC CAG 965

L T R E V D G V W V Y N R S S Y P I F I 342
CTG ACG CGG GAG GTG GAT GGT GTG TGG GTG TAC AAC CGC AGC AGT TAC CCC ATC TTC ATC 1026

K S A T L D N P D S R T L L V H K V F P 362
AAG TCC GCC ACA CTG GAC AAC CCT GAC TCC AGG ACG CTG TTG GTA CAC AAG GTG TTC CCC 1086

G F S I K A F D Y E K A Y S L Q R P N D 382
GGT TTC TCC ATC AAG GCT TTC GAC TAC GAG AAG GCG TAC AGC CTG CAG CGG CCC AAT GAC 1146

H E F M Q P W T G F T V Q I S F V K G 402
CAC GAG TTT ATG CAG CAG CCG TGG ACG GGC TTT ACC GTG CAG ATC AGC TTT GTG AAG GGC 1206

W G Q C Y T R Q F I S S C P C W L E V I 422
TGG GGT CAG TGC TAC ACC CGC CAG TTC ATC AGC AGC TGC CCG TGG CTA GAG GTC ATC 1266

F N S R * 426
TTC AAC AGC CGG TAG CGCGTGGAGGGACAGAGGGTAGCTGAGCTGAGCTTCACTTGGCTCTGGTTGGTTTTCT

GCTAATTTCTCCTGAGTGCCTGCTTTCTGAAACTCTTGGCTCTGGAAATAGCTTATGAAAAGAAATTGTTGGGGTTTTCT

TCTTCTCGTCTCGTTTGTTCTGCTTCTGCTTCTGCTCTGGCTCTGGCTCTGGAAATAGCTTATGAAAAGAAATTGTTGGGGTTTTCT

TGGAAGAACGGGAGGTATGATGGCAGGACACCTGATAGGAAGAGGGAGCAGAACACACA

FIG. 2C

GTGATGAAGGGGGGGTCACTTCACCTGGCTCAGGAGTGTGAGTGTGGGCTGTGTGCACGGCT
GTGAGGGCAGATGGGAGACAACGTTGCTCTTATGGATGTCCCCAGCAGAGGGTTGGCA
GTCCCAAGCGGTGTCTCCCTGGACACGGCTCAGTGGGAGAGGGCAGTACCTGGGAAAGCTGGGGCTGGGG
TCCAGCAGCTGCCAGGAGCACGGCTGTCCCCAGCCTGGGAAGGCCCTGCCCTCATCAAGGACACG
GGCCTGTCCACAGGCTCTGAGCAGCGAGCCTGCTAGTGGCGAACAGAACCAATTATTTCATCCTGTCTTATTC
CTTCCTGCCAGCCCCCTGCCATTGTAGCGTCCTTTGGCCATCTGCTCACAGTATTGCTCACCCAGTGCCCTCTCCCCTCAGC
AGGGCTGCCGGGGCAGCCCCCTCACAGTATTGCTCACCCAGTGCCCTCTCCCCTCAGCCTCTGCCCTGGT
GACATCAGGTTTCCGGACTTAGAAAACCAGCTCAGCACTGCCCTGCTCCATCCTGTGTTAAGCTCTGCTATTAG
GCAGCAAGGGGATGTCCCTGGGAGGGACATGCTTAGCAGTCCCCCTCCAAGAAGGATTGGTCCGTCATAAC
CCAAGGTACCATCCTAGGCTGACACCTAACCTCTTCAACTACACTCATACACTGTTGATGATACTTCGACA
CTGTTCTTAGCTCAATGAGCATGTTAGACCTTAAGCTATTCTCAACTACAAAGGTTAAATGAACAAGAGA
AGCATTCTCATTGGAAATTAGCATTGTTAGTGTGCTTGGAGAGAAAGGACTCCTGAAAAAAACCTGAGATTAA
GAAAAAAATGTATTTATGTTATATAAATATTACTGTAAATAAGACGTTTATAAGCATCATTATA

FIG.2D

TGTATTGTCATGTGTATAAACAGAAAAATAAAGAAAAGATGGCACTTTGCTTTAAATATAAAAGCAAATAACAAATGC
CAAATTTAAAAGATAAACACAAAGATTGGTGTCCCCCTATGGGTGTATCACCTAGCTGAATGTTTTCTAAAGGAG
TTTATGTTCCATTAAACGATTTTAAAATGTACACTTGAAAAAAAGAAAAAA

FIG. 2E

GGCACGAGGTTCGCCCTGGGGAGCAGAGACAGGGCTCGGGTGGAGTC

	M	C	N	T	P	T	Y	C	D	L	10										
TTGGTTCTATAAGAGCTGAGAGAGATTTCTAAGAT	ATG	TGT	AAC	ACA	CCA	ACG	TAC	TGT	GAC	CTA	30										
G	K	A	A	K	D	V	F	N	K	G	Y	G	F	G	M	V	K	I	D	30	
GGA	AAG	AAG	GCT	GCT	AAG	GAT	GTC	TTC	AAC	AAA	GGA	TAT	GGC	TTT	GGC	ATG	GTC	AAG	ATA	GAC	90
L	K	T	K	S	C	S	G	V	E	F	S	T	S	G	H	A	Y	T	D	150	
CTG	AAA	ACC	AAG	TCA	TCT	TGT	AGT	GGA	GTA	GAA	TTT	TCT	ACT	TCT	GGT	CAT	GCT	TAC	ACT	GAT	150
T	G	K	A	S	G	N	L	E	T	K	Y	K	V	C	N	Y	G	L	T	70	
ACA	GGG	AAA	GCA	TCA	GGC	AAC	CTA	GAA	ACC	AAA	TAT	AAG	GTC	TGT	AAC	TAT	GGA	CTT	ACC	210	
F	T	Q	K	W	N	T	D	N	T	L	G	T	E	I	S	W	E	N	K	90	
TTC	ACC	CAG	AAA	TGG	AAC	ACA	GAC	AAT	ACT	CTA	GGG	ACA	GAA	ATC	TCT	TGG	GAG	AAT	AAG	270	
L	A	E	G	L	K	L	T	L	D	T	I	F	V	P	N	T	G	K	K	110	
TTG	GCT	GAA	GGG	TTG	AAA	CTG	ACT	CTT	GAT	ACC	ATA	TTT	GTA	CCG	AAC	ACA	GGA	AAG	AAG	330	
S	G	K	L	K	A	S	Y	K	R	D	C	F	S	V	G	S	N	V	D	130	
AGT	GGG	AAA	TTG	AAG	GCC	TCC	TAT	AAA	CGG	GAT	TGT	TTT	AGT	GTT	GGC	AGT	AAT	GTT	GAT	390	
I	D	F	S	G	P	T	I	Y	G	W	A	V	L	A	F	E	G	W	L	150	
ATA	GAT	TTT	TCT	GGA	CCA	ACC	ATC	TAT	GGC	TGG	GCT	GTG	TTG	GCC	TTC	GAA	GGG	TGG	CTT	450	

FIG. 3A

A G Y Q M S F D T A K S K L S Q N N F A 170
GCT GGC TAT CAG ATG AGT TTT GAC ACA GCC AAA TCC CAG AAT TTC GCC 510

L G Y K A A D F Q L H T H V N D G T E F 190
CTG GGT TAC AAG GCT GCG GAC TTC CAG CTG CAC ACA CAT GTG AAC GAT GGC ACT GAA TTT 570

G G S I Y Q K V N E K I E T S I N L A W 210
GGA GGT TCT ATC TAC CAG AAG GTG AAT GAG ATT GAA ACA TCC ATA AAC CTT GCT TGG 630

T A G S N N T R F G I A A K Y M L D C R 230
ACA GCT GGG AGT AAC ACC CGT TTT GGC ATT GCT GCT AAG TAC ATG CTG GAT TGT AGA 690

T S L S A K V N N A S L I G L G Y T Q T 250
ACT TCT CTC TCT GCT AAA GTA AAT GCC AGC CTG ATT GGA CTG GGT TAT ACT CAG ACC 750

L R P G V K L T L S A L I D G K N F S A 270
CTT CGA CCA GGA GTC AAA TTG ACT TTA TCA GCT TTA ATC GAT GGG AAG AAC TTC AGT GCA 810

G G H K V G L G F E L E A * 283
GGA GGT CAC AAG GTT GGC TTG GGA TTT GAA CTG GAA GCT TAA TGTGGTTTGAGGAAAGCATCAGA 849

TTTGTCCCTGGAAGTGAAGAGAAATGAAACCCACTATGTTGGCCCTAAAGATTCTCTGTGAAATTCTGAGGGAGACGCTT
CTTTTTATTCTTCCAAAGAATTGTAATCCTCCCCACACTGAAGTCTAGGGTTGCCAATCCCTCTGAGGGAGACGCTT
GAAGGCATGCCCTGGAAGTTGTCATGTTGGCACGTTTCAAGTTCTGAAGTGTATTAAATGTGTTCTCAGCG

FIG. 3B

ACAGTGAGCGTCATGTTAGAGGAGACGATCTGACCCACCAGTTGTACATCACGTCCTGCATGTCCCACACCATT
TCATGACCTTGTAAATACTGGCTCTGTGCTATAGTGAATCTTTGGTTTGCATCATAGTAAAATAAACCCA
TCACATTTGGAACATAAAAAAAAAAAAAAA

FIG. 3C

T	S	L	A	L	V	L	N	L	Q	I	Q	R	N	V	T	L	F	P	20
ACG	AGC	CTA	GCC	CTG	GTG	CTG	AAC	CTG	CAG	ATC	CAG	AGG	ATG	GTC	ACT	CTC	TTC	CCC	60
E	E	V	I	A	T	I	F	S	S	A	W	W	V	P	P	C	C	G	40
GAG	GAG	GTG	ATC	GCC	ACC	ATC	TTT	TCC	TCC	GCC	TGG	TGG	GTC	CCT	CCC	TGC	TGC	GGG	120
A	A	A	V	V	G	L	Y	P	C	I	D	S	H	L	G	E	P	H	60
GCA	GCT	GCT	GCT	GTT	GGT	GGC	CTA	CTG	TAC	CCC	TGT	ATC	GAC	AGT	CAC	CTC	GGA	GAA	180
K	F	K	R	E	W	A	S	V	M	R	C	I	A	V	F	V	G	I	80
AAA	TTT	AAG	AAG	AGA	TGG	GCC	AGT	GTC	ATG	CGC	TGC	ATA	GCA	GTT	TTT	GTT	GGC	ATT	240
H	A	S	A	K	L	D	F	A.	N	N	V	Q	L	S	L	T	L	A	100
CAC	GCC	AGT	GCT	AAA	TTG	GAT	TTT	GCC	AAT	AAT	GTC	CAG	CTG	TCC	TTG	ACT	TTA	GCA	300
L	S	L	G	L	W	W	T	F	D	R	S	R	S	G	L	G	L	G	120
CTA	TCT	TTG	GGC	CTT	TGG	TGG	ACA	TTT	GAT	CGT	TCC	AGA	AGT	GGC	CTT	GGG	CTG	GGG	360
T	I	A	F	L	A	T	L	I	T	Q	F	L	V	Y	N	G	V	Y	140
ACC	ATA	GCT	TTT	CTA	GCT	ACG	CTG	ATC	ACG	CAG	TTT	CTC	GTC	TAT	AAT	GGT	GTC	TAT	420
Y	T	S	P	D	F	L	Y	I	R	S	W	L	P	C	I	F	F	S	160
TAT	ACA	TCC	CCA	GAT	TTC	CTC	TAT	ATT	CGT	TCT	TGG	CTC	CCT	TGT	ATA	TTT	TTC	TCA	480
G	V	T	G	N	I	G	R	Q	L	A	M	G	V	P	E	K	P	H	180
GGC	GTC	ACG	GTG	GGG	AAC	AAC	ATA	GGA	CGA	CAG	TTA	GCT	ATG	GGT	GTT	CCT	GAA	AAG	540

FIG. 4A

182
546

S D *
AGT GAT TGA GTCTTCAAAACCCACCGATTCTGAGAGCAAGGAAGGATTTGGAAAGAAAATCTGACTGTGGATTATGAC
AAAGATTATCTTTCTTAAGTAATCTATTAGATCGGGCTGACTGTACAATGACTCCTGGAAAAAAACTCTTCACCT
AGTCTAGAATAGGGAGGTGGAGAATGATGACTTACCCCTGAAGTCTTCCCTGACTGCCGCACTGGCGCCCTGTC
CCTGGAGCATTCTGCCAGGCTACGTTGGGGTTCAGGCAGGGCAGCTTCCCAAGTATTGATTTCATTGATTAA
AACAAAGTTGCCATATTTCAAAAAAAAAAAAMCTGAGACCAACCCGCAAGTTTGTCAGTGCCCCAAGGAGGT
AGGTTGATGGTGGCTTAACAAACATGAAGTAGTGGTGTAAATAGGAATAATTTATCCNAAAGATTTTAAAAATGGGCT
GTGTTAAAAAAAAAA

FIG. 4B

M C H S R S C H P T M T I L Q A P T P A 20
ATG TGT CAC TCT CGC AGC TGC CAC CCG ACC ATG ACC ATC CTG CAG GCC CCG ACC CCG GCC 60
CCC TCC ACC ATC CCG GGA CCC CGG CGG TCC GGT CCT GAG ATC TTC ACC TCT GAC CCT 40
CTC CCG GAG CCC GCA GCG GCC CCT GCC GGG OGC CCC AGC GCC TCT CGC GGG CAC CGA AAG 120
R S R R V L Y P R V V R R Q L P V E E P 60
GGC AGC CGC AGG GTT CTC TAC CCT CGA GTG GTC CGG CGC CAG CTG CCA GTC GAG GAA CGG 180
N P A K R L F L L T I V F C Q I L M 80
AAC CCA GCC AAA AGG CTT CTC TTT CTG CTC ACC ATC GTC TTC TGC CAG ATC CTG ATG 240
A E E G V P A P L P P E D A P N A A S L 100
GCT GAA GAG GGT GTG CGG CCC CTG CCT CCA GAG GAC GCC CCT AAC GCC GCA TCC CTG 300
GCG CCC ACC CCT GTG TCC CCC GTC CTC GAG CCC TTT AAT CTG ACT TCG GAG CCC TCG GAC 120
A P T P V S P V L E P F N L T S E P S D 140
GCG CCC ACC CCT GTG TCC CCC GTC CTC GAG CCC TTT AAT CTG ACT TCG GAG CCC TCG GAC 420
Y A L D L S T F L Q Q H P A A F * 157
TAC GCT CTG GAC CTC AGC ACT TTC CTC CAG CAA CAC CGG GCC GCG GCC TTC TAA 471
CTGTGACTCCCCGACTCCCCAAAAAGAATCCGAAAAACACCAAGGCGTACCTGGTGGCAGAGCGTA 550

FIG. 5A

CCCCCACTGGGACTTCCGAGGCCAACTTGAACCTCAGAACACTACAGGGAGACGCCACCCGGTGCCTTGAGGGGGAAACG
629
GGCGCACAGAGACCAGGGCATAGAGACCAGGGCACAGCCAGCTGGGGCTAGGCCCGGTGGGAAGGAGAGCGTCGT
708
TAATTATTCTTATTGCTCCTAATTAAATTATGTTATTATGCTCTCTAGGTGATGGAGATGTGTACGTA
787
ATATTATTAACTTATGCAAGGGTGTGAGATGTTCCCTCTGCTGTAATGCAGGTCTCTGGTATTATTGAGCTTT
866
GTGGGACTGGTGGAAAGCAGGACACCTGGAAACTGGGAAAGTAGGAGAGAAATGGGGAGGACTCGGGTGGGGAGGAC
945
GTCCCGGCCTGGGATGAAGTCTGGTGGGTGCTGAAGTTAGGAGGTGACTGCATCCTCCAGCATCTCAACTCCGCTG
1024
TCTACTGTGTGAGACTTCGGGACCATAGGAATTGAGATCCGTGAGATCCTTCCATCTTGAAGTGCCTTTAGGG
1103
TGGCTGCGAGGTAGAGGGTTGGGGTTGGTGGGCTGTCACGGAGCGACTGTCGAGATCGCCTAGTATGTTCTGTGAACA
1182
CAAATAAAATTGATTACTGTCAAAAAAAAAAAACTCGAG
1228

FIG. 5B

GAATT CGGCACGGAGGAGCTCCCTTWCAGGGCTCCCCATCATGGGCTTAAGGGTTGAGTCCTCA 68
GGTTCTGGGGCAGGAAGGAGCTCGGGCAACTCAGGAGCCCCCTCCATCCACAGCCCCCTCTGGGAAACTTG 147
GCAACCCGGGGCATGGATCTTCTTAAGCAAGATGCTGAGCTGGAAAGATGGGGTTAAGGTAAATGTCCTAA 226
CTGAAACTTGCAGGGCACTGGAGGGCTGTGAACACTTTCTGGCTTAGAATTAGGTCTAGATCCAAAAGGCTA 305
AGTACCCCCCTGGGGCTAACCGAGGGCATGCCCTGGCTGAGCTAACCTCTGGTGCACTGGCCCTGGCTGACTGCTC 384
TTCTGCAGGAAGTGGAGGAGATTCTGAAGTTGATTCTCTCAGGCTGGATGTCCTCAAGGGGTTGGAGTTCTGATGTCT 463
TTCTGTCTCCTCTCTCTTCTCCCTACCAAGGTCCACTCTCTCAGAGGGCCTGGCTCTAAAGTTCTC 542
CTGTTAAAGTTAGAGCAAATTGGTTATTATTTAAATCAATAAAACTTTAAAGTACTAAGACAACCTCTAAGAGG 621
GGAGTGGACAGAGGGCCTGGTGGCAGCTCACAGTTCTTCTGACCTTGGTCTCACCCACCAAGTGTCCCACCTGAG 700
TGGCCACCTGCCAACCTGAGGTAAATGCCCTGGGGCTCCACCTGGGGCTCCAGATCCAGGCCATGTGGAGTGGC 779
GGCTGATTGTTACCCAGTAGTGTGATAGCACATTATTCATAACAGCCAAGAGAGGAAGCCAACCCAAATGTCATTAG 858
CTGATAAAATGGATAAAATGGTACGTCCGAAGAATGGAAATATCATTCACCCTGAAAAGAACGAAAGTCCAGCA 937
CCAAAACGTGCTACAAACATGGATGAAACTTCGATGACTTTGTGOCACATGAAAGAACGCCACAAAAGGCCATAT 1016

FIG. 6A

M S R M G K P I E T Q K S P P P 16
ATTGTATGAAATGAA ATG TCC AGA ATG GGC AAA CCC ATA GAG ACA CAA AAA TCT CCG CCA CCT 1079

P Y S R L S P R D E Y K P L D L S D S T 36
CCC TAC TCT CGG CTG TCT CCT CGC GAC GAG TAC AAG CCA CTG GAT CTG TCC GAT TCC ACA 1139

L S Y T E T E A T N S L I T A P G E F S 56
TTG TCT TAC ACT GAA ACG GAG GCT ACC AAC TCC CTC ATC ACT GCT CCG GGT GAA TTC TCA 1199

D A S M S P D A T K P S H W C S V A Y W 76
GAC GCC AGC ATG TCT CCG GAC GCC ACC AAG CCG AGC CAC TGG TGC AGC GTG GCG TAC TG 1259

E H R T R V G R L Y A V Y D Q A V S I F 96
GAG CAC CGG ACG CGC GTG GGC CGC CTC TAT GCG GTG TAC GAC CAG GCC GTC AGC ATC TTC 1319

Y D L P Q G S G F C L G Q L N L E Q R S 116
TAC GAC CTA CCT CAG GGC AGC GGC TTC TGC CTG GGC CAG CTC AAC CTG GAG CAG CGC AGC 1379

E S V R T R S K I G F G I L L S K E P 136
GAG TCG GTG CGG CGA ACG CGC AGC AAC ATC GGC TTC GGC ATC CTC AGC AAG GAG CCC 1439

D G V W A Y N R G E H P I F V N S P T L 156
GAC GGC GTG TGG GCC TAC AAC CGC GGC GAG CAC CCC ATC TTC GTC AAC TCC CCG ACG CTG 1499

D A P G G R A L V V R K V P P G Y S I K 176
GAC GCG CCC GGC CGC CGC CTG GTC GTG CGC AAG GTG CCC CCC GGC TAC TCC ATC AAG 1559

FIG. 6B

V F D F E R S G L Q H A P E P D A A D G 196
GTG TTC GAC TTC GAG CGC TCG GGC CTG CAG CAC GCG CCC GAG CCC GAC GCC GCC GAC GGC 161.9

P Y D P N S V R I S F A K G W G P C Y S 216
CCC TAC GAC CCC AAC AGC GTC CGC ATC AGC TTC GCC AAG GGC TGG GGG CCC TGC TAC TCC 167.9

R Q F I T S C P C W L E I L L N N P R • 236
CGG CAG TTC ATC ACC TCC TGC CCC TGC TGG CTG GAG ATC CTC CTC AAC AAC CCC AGA TAG 173.9

TGGCGCCCCGGGGAGGGGGGGTGGGAGGGCCGGCCACGCCCTGGAGAGGGGGCGATGCCAGA 181.8

GACACAGCCCCACGGACAAAACCCCCCAGATACTACCTAGATTAAAGTTTATATTATATGGAAT 189.7

ATATATTATACTTGTAAATTATGGAGTCATTTCACAATGTAATTATTATGTTATGGCAATGTGTATATGGACAA 197.6

ACAAGAAAGAGCCACTTGGCTTAAATTCTTTCAATTACAGATAATTTCTTCTCTCCCTCTTACT 205.5

TTTTATATATATAAAAGAAAAATGATACTACGGAGGCTAGGTGGAAAAGCCTGGTTGGTATGGTTTTGAGATA 213.4

TTAATGCCAGACAAAAGCTAATACCAGTCACTCGATAATAAGTATTGCATTATAGTTTTAAACTGTCTTCT 221.3

TTTTACAAAGAGGGCAGGTAGGGCTTCAGCGGATTCTGACCCATCSTGTACCTGAAACTTGACCTCAGTTCAAG 229.2

TTTTACTTTATTGGATAAAAGACAGAACAAATTGAAAAGGAGAAAGTCACATTACTCTTAAGTAAACAGAGAAAG 237.1

FIG. 6C

TTCTGTTCTTCCATGGCTATGGGTGTCAGGGATGGGAGGGTTCATGGAGGGAGGTTCATGCCCTAGCCTAGAAAGGCCAGGTCCATGACCC 2450
CCATTTATCCCTGGACAAGCTTCCAGTCTGATGGAGGGAGGTTCATGGGCTAGAAAGGCCAGGTCCATGACCC 2529
CCATCTTGAGTTATGAGCAAGCTAAAAGAACACTATTTTCAACCATTTCACCATTTGTGGAAATGGCCTGGGAACAAAGACT 2608
GAAATGGGGCTTGAGGCCACCTGCTACCTTGAGAGAACCATCTCGAGCCCCGTAGATCTTGTAGACCTCCACAGGC 2687
TATTTCCCACCCCCAGCCAATAAGCTCAGAATCTGCCATCCAGGGCTGTATTAATGATTATGTAAGGCAGATG 2766
GTTTATTTCTACTTTGAGGTTAAATGGGAGGTTCTGGAAAGGATAAAATGATTGCTCATGAGACAAAAATCAAGGTT 2845
AGAAGTTACATGGAATTGTAGGGACAGGCCATATCATTAGATCAGCTTTCTGAAGAATATTCTCMAAAAAGAAAGTC 2924
TCCTTGGCAGATAACTAAGGGAATGTTTCATTGTATATCTTTCTGGAGATTATTAACATATTAAAGTGCTC 3003
TGAGAAGTCTGTGTATTATCTCTGGCTGCATAATAAATTATCCCCAAACTTAAAAAAAGAAACTCGA 3082
3083
G

FIG. 6D

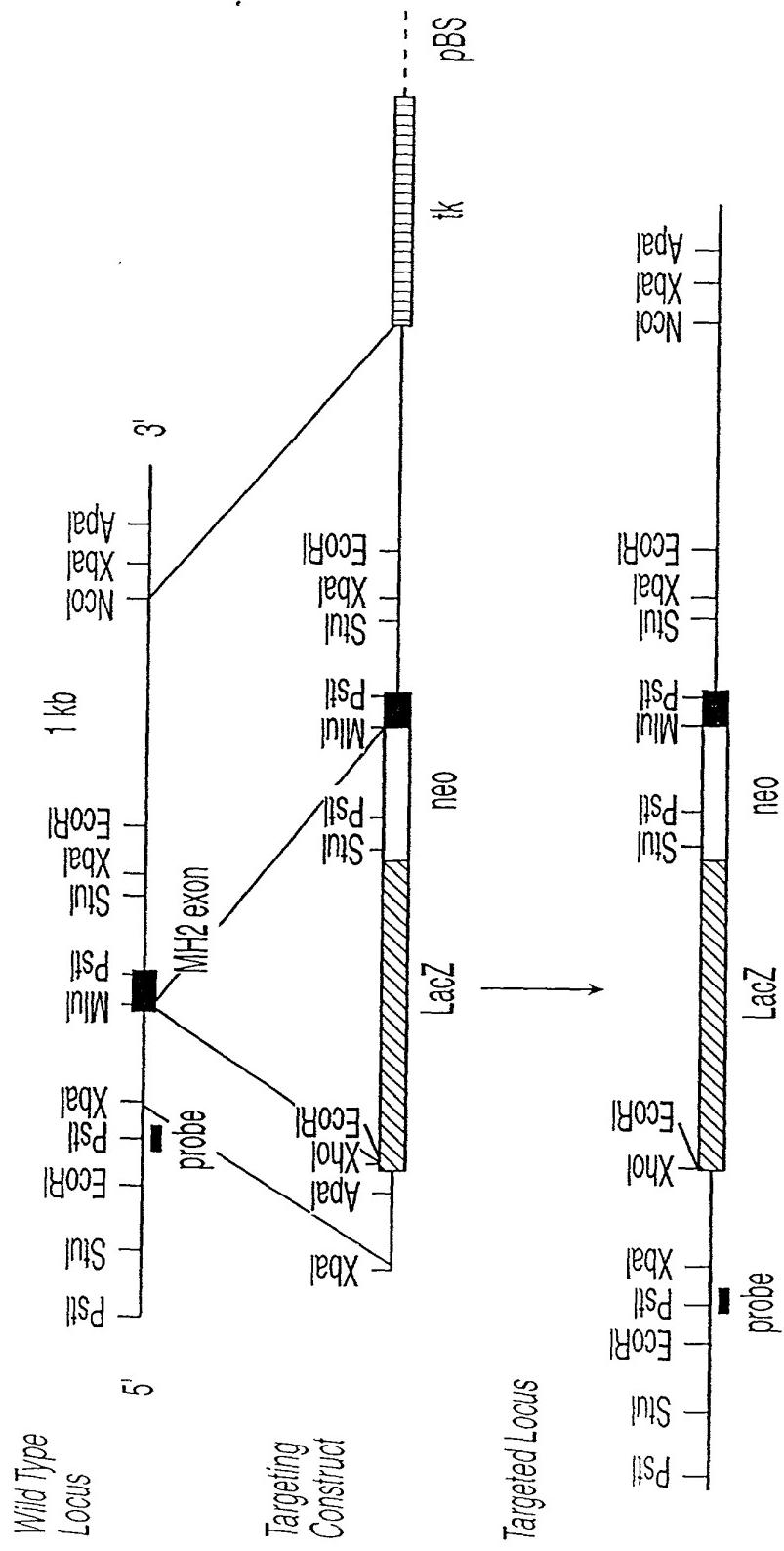


FIG. 7A

FIG. 7B

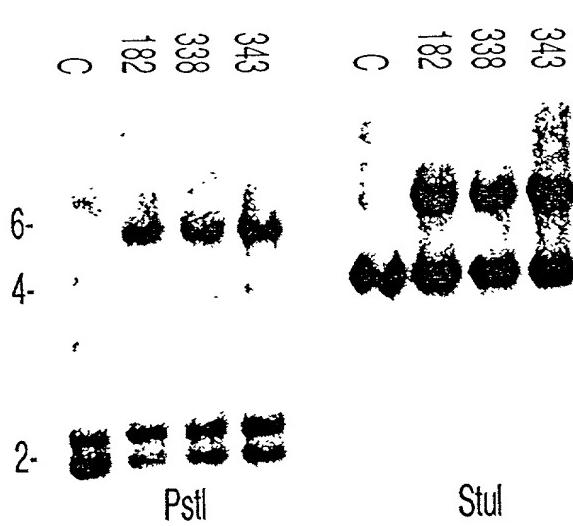


FIG. 7C

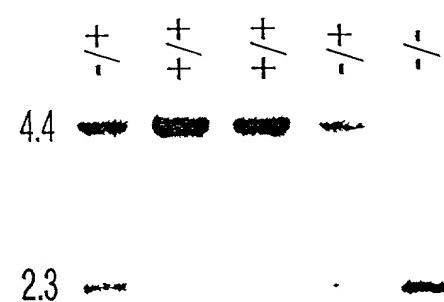
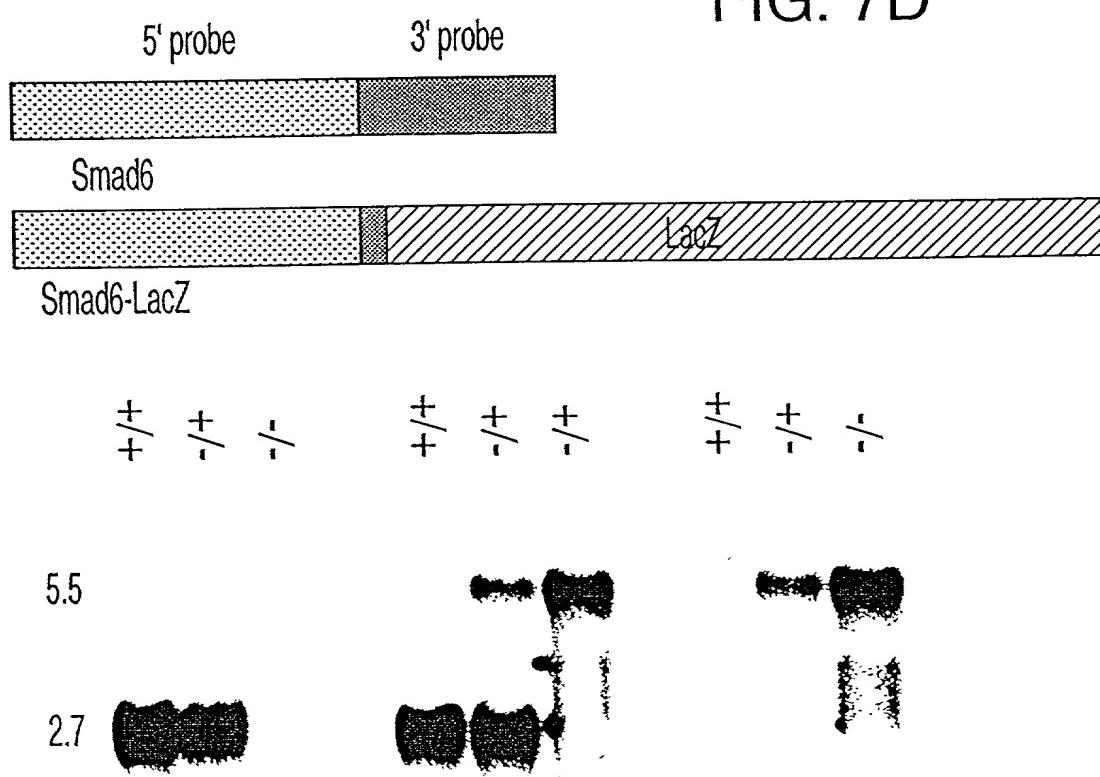


FIG. 7D



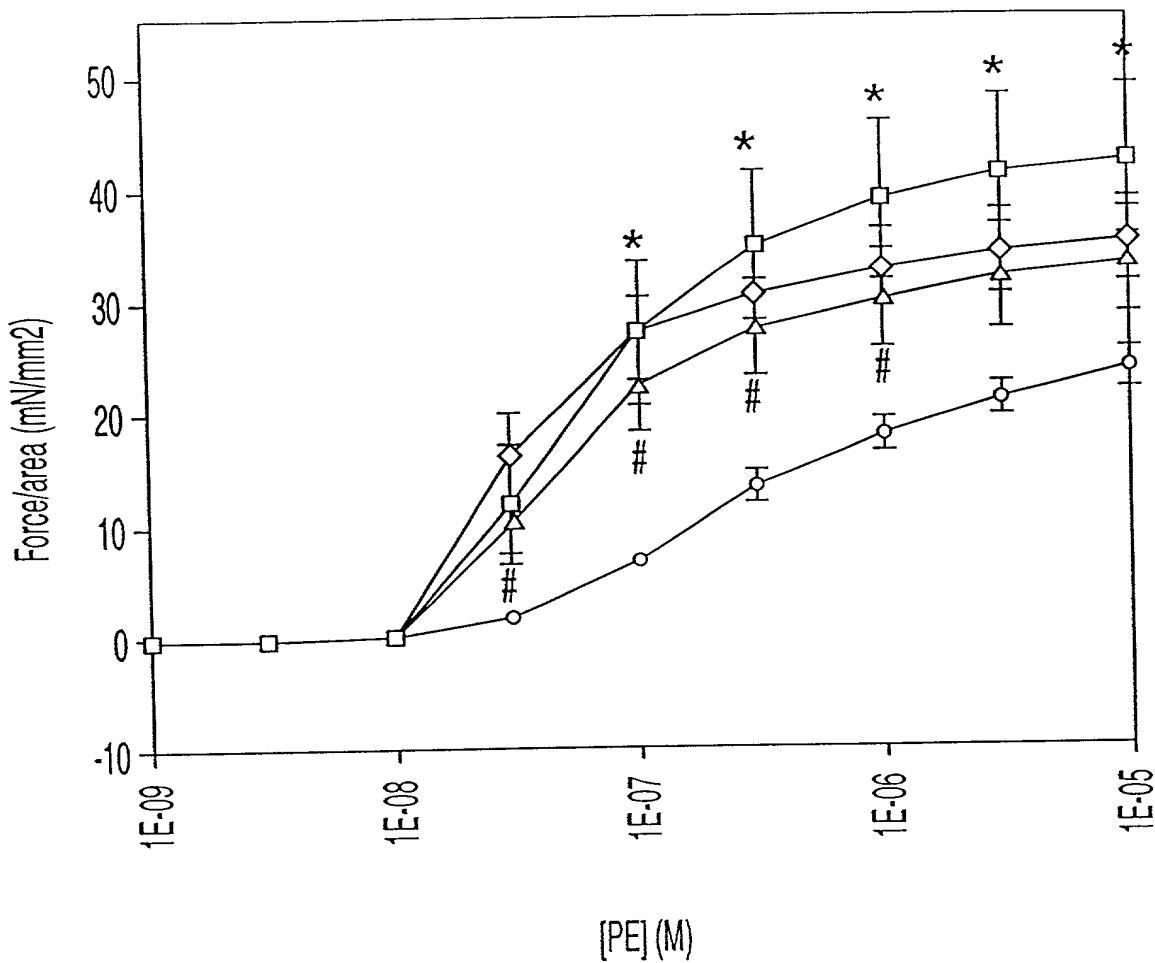


FIG. 8

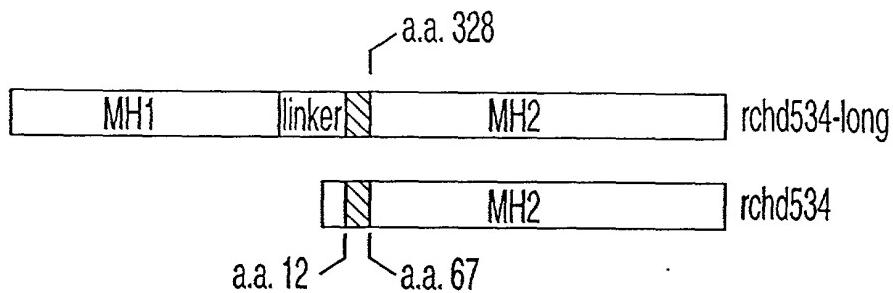


FIG. 9

ACGAGGACGACAGGCTGTGCGGGTCTGCACGGCGCTCCGCGGGAGCTTCATGTGGGCTGCGACCCGCGCAGCCGG 79

M 1
CCCCTCGCTGAGGGAACGGACCCCCGGTAACGGAGACCGCCTTCCCCCTGGCGCAAAGGATATCGT ATG 157
F R S K R S G L V R R L W R S R V V P D 21
TTC AGG TCC AAA CGC TCG GGG CTG GTG CGG CGA CTT TGG CGA AGT CGT GTG GTC CCC GAC 217
R E E G G S G G G G G D E D G S L G S 41
CGG GAG GAA GGC GCC AGC GGC GGC GGC GGT GGC GGC GAC GAG GAT GGG AGC TTG GGC AGC 277
R A E P A P R A R E G G G C G R S E V R 61
CGA GCT GAG CCG GCC CCG CGG GCA AGA GAG GGC GGA GGC TGC GGC CGC TCC GAA GTC CGC 337
P V A P R R P R D A V G Q R G A Q G A G 81
CCG GTA GCC CCG CGG CCC CGG GAC GCA GTG GGA CAG CGA GGC GCC CAG GGC CCG GGG 397
R R R R A G G P P R P M S E P G A G A G 101
AGG CGC CGG CGC GCA GGG GGC CCC CCG AGG CCC ATG TCG GAG CCA GGG GCC GGC GCT GGG 457
S S L L D V A E P G G P G W L P E S D C 121
AGC TCC CTG CTG GAC GTG GCG GAG CCG GGA GGC CCG GGC TGG CTG CCC GAG AGT GAC TGC 517
E T V T C C L F S E R D A A G A P R D A 141
GAG ACG GTG ACC TGC TGT CTC TTT TCG GAG CGG GAC GCC GGC GCG CCC CGG GAC GAC GCC 577
S D P L A G A A L E P A G G G R S R E A 161
AGC GAC CCC CTG GCC GGG GCG GCC CTG GAG CCG GCG GGC GGG CGG AGT CGC GAA GCG 637
R S R L L L E Q E L K T V T Y S L L K 181
CGC TCG CGG CTG CTG CTG GAG CAG GAA CTC AAA ACC GTC ACG TAC TCG CTG CTG AAG 697
R L K E R S L D T L L E A V E S R G G V 201
CGG CTC AAG GAG CGC TCG CTG GAC ACG CTG CTG GAG GCG GTG GAG TCC CGC GGC GGC GTG 757
P G G C V L V P R A D L R L G G Q P A P 221
CCG GGC GGC TGC GTG CTG GTG CCG CGC GCC GAC CTC CGC CTG GGC GGC CAG CCC GCG CCG 817
P Q L L G R L F R W P D L Q H A V E L 241
CCG CAG CTG CTG CTC GGC CGC CTC TTT CGC TGG CCC GAC CTG CAG CAC GCC GTG GAG CTG 877
K P L C G C H S F A A A A D G P T V C C 261
AAG CCC CTG TGC GGC TGC CAC AGC TTC GCC GCC GAC GGC CCT ACC GTG TGC TGC 937
N P Y H F S R L C G P E S P P P Y S R 281
AAC CCC TAC CAC TTC AGC CGG CTC TGC GGG CCC GAA TCT CCG CCA CCT CCC TAC TCT CGG 997
L S P R D E Y K P L D L S D S T L S Y T 301
CTG TCT CCT CGC GAC GAG TAC AAG CCA CTG GAT CTG TCC GAT TCC ACA TTG TCT TAC ACT 1057

E T E A T N S L I T A P G E F S D A S M 321
GAA ACG GAG GCT ACC AAC TCC CTC ATC ACT GCT CCG GGT GAA TTC TCA GAC GCC AGC ATG 1117

S P D A T K P S H W C S V A Y W E H R T 341
TCT CCG GAC GCC ACC AAG CCG AGC CAC TGG TGC AGC GTG GCG TAC TGG GAG CAC CGG ACG 1177

R V G R L Y A V Y D Q A V S I F Y D L P 361
CGC GTG GGC CGC CTC TAT GCG GTG TAC GAC CAG GCC GTC AGC ATC TTC TAC GAC CTA CCT 1237

Q G S G F C L G Q L N L E Q R S E S V R 381
CAG GGC AGC GGC TTC TGC CTG GGC CAG CTC AAC CTG GAG CAG CGC AGC GAG TCG GTG CGG 1297

R T R S K I G F G I L L S K E P D G V W 401
CGA ACG CGC AGC AAG ATC GGC TTC GGC ATC CTG CTC AGC AAG GAG CCC GAC GGC GTG TGG 1357

A Y N R G E H P I F V N S P T L D A P G 421
GCC TAC AAC CGC GGC GAG CAC CCC ATC TTC GTC AAC TCC CCG ACG CTG GAC GCG CCC GGC 1417

G R A L V V R K V P P G Y S I K V F D F 441
GGC CGC GCC CTG GTC GTG CGC AAG GTG CCC CCC GGC TAC TCC ATC AAG GTG TTC GAC TTC 1477

E R S G L Q H A P E P D A A D G P Y D P 461
GAG CGC TCG GGC CTG CAG CAC GCG CCC GAG CCC GAC GCC GAC GGC CCC TAC GAC CCC 1537

N S V R I S F A K G W G P C Y S R Q F I 481
AAC AGC GTC GCG ATC AGC TTC GCC AAG GGC TGG GGG CCC TGC TAC TCC CGG CAG TTC ATC 1597

T S C P C W L E I L L N N P R * 497
ACC TCC TGC CCC TGC TGG CTG GAG ATC CTC CTC AAC AAC CCC AGA TAG 1645

TGGCGGCCCGGCGGGAGGGCGGGTGGAGGGCCGCGGCCACCGCCACCTGCCGGCTCGAGAGGGGCCATGCCAGA 1724

GACACAGCCCCACGGACAAACCCCCAGATATCATCTACCTAGATTAAAGTTTATATATTATGGAAAAA 1803

AAAAAAAAAAAAAAA 1817

FIG.10B